

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph that extends from page 7 to page 8 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

As shown in Figs. 2 and 6, bladder 10 includes at least four sheets of the same or different barrier materials. Bladder 10 includes a first barrier sheet 11 extending coextensive with and secured to a second barrier sheet 12. Sheets 11 and 12 are secured to each other along their peripheral edges 34, 35, along a central area 21, and along a U-shaped area 23 using RF welding and other well known securing techniques. In this manner, a reservoir ~~chamber~~ insert 14, including two U-shaped channels or chambers 13 are formed.

Please replace the paragraph that extends from page 8 to page 9 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

An outer fluid receiving, cushioning member 20 thus surrounds reservoir ~~chamber~~ insert 14 and provides the initial cushioning during a foot strike. Cushioning member 20 includes a first outer cushioning chamber 15 and a second outer cushioning chamber 18. Connection area 19 divides each chamber 15, 18 into a central chamber 25 and a U-shaped chamber 27. Each chamber 15, 18 is positioned on a respective side of ~~chamber~~ insert 14 and is formed when barrier sheets 16 and 17 are secured to barrier sheets 11 and 12. Because of the connection of the peripheral edges of sheets 11, 12, 16, and 17 to one another, chambers 15 and 18 are isolated from each other so that they are not in fluid communication. However, as shown in Fig. 8, chambers 15 and 18 can be formed by directly securing peripheral edges 36 and 37 to each other so that they are spaced away from peripheral edges 34 and 35. In this alternative embodiment, chambers 15 and 18 are in fluid communication with each other and their shared fluids surround inner reservoir ~~chamber~~ insert 14.

Please replace the paragraph that extends from page 10 to page 11 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

The barrier materials forming sheets 16 and 17 contain the cushioning gases within chambers 15 and 18. However, overtime and under heavy loads, some of the contained gas will diffuse out of these chambers through sheets 16 and 17, thereby causing a loss in pressure and a loss of cushioning. Inner cushioning ~~chamber~~ insert 14 counters this loss of cushioning fluid. Cushioning ~~chamber~~ insert 14 performs a dual function within bladder 10. It acts as a reservoir for restoring gas and pressure to the outer chambers 15, 18 so that the cushioning properties of bladder 10 are not compromised during the life of the footwear, and it provides an additional layer of cushioning that prevents bladder 10 from bottoming out when heavy loads are applied.

Please replace the paragraph that is wholly located on page 11 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

The inner cushioning ~~chamber~~ insert 14 is formed when sheets 11 and 12 are welded together, as discussed above. As illustrated in the figures, ~~chamber~~ insert 14 includes fluid channels 13 that are formed in ~~chamber~~ insert 14 by welding sheets 11 and 12 together at points spaced inwardly from peripheral edges 34, 35. While channels 13 are illustrated isolated from one another, they can be in fluid communication. Channels 13 are inflated to a higher pressure than chambers 15 and 18 so that diffusion only occurs in one direction, from ~~chamber~~ insert 14 into chambers 15, 18. Because ~~chamber~~ insert 14 acts as a gas reservoir for chambers 15 and 18, the gas contained within channels 13 moves into chambers 15 and 18 to restore or maintain the originally established pressure levels for cushioning a foot strike. Chamber Insert 14 typically contains nitrogen at a pressure between 40 and 60 PSI, with a preferred range being between 45 and 50 PSI when sheets 11 and 12 are formed from urethane based materials. However, higher pressures can be used depending on the barrier materials chosen for sheets 11 and 12. It is contemplated that one of the supergases discussed above could be used in place of nitrogen.

Please replace the paragraph that extends from page 11 to page 12 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

The materials forming inner sheets 11, 12 allow the gas contained within inner ~~chamber~~ insert 14 to move into outer chambers 15, 18 in response to certain preselected

conditions. These conditions include the gradual loss of pressure over time, the application of a predetermined load and the use of the bladder for a predetermined period of time. The materials are selected, in part, based on their Gas Transmission Rate (GTR). The GTR reflects the amount of gas that diffuses through a barrier material having a specific thickness over a specific period of time. GTR is a constant that varies with the thickness of the material. The GTR changes as the thickness of the material changes. Because the desired pressure level in chambers 15 and 18 can differ, the GTR of sheets 11 and 12 can also differ.

Please replace the paragraph that is wholly located on page 12 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

In a preferred embodiment, sheets 11 and 12 are chosen so that their GTR allows the gas from channels 13 to diffuse into chambers 15 and 18 at the same rate or substantially the same rate as the gases diffuse out of chambers 15 and 18. One preferred combination of materials and gases would use a standard urethane film for sheets 16 and 17 forming outer chambers 15 and 18, with outer chambers 15 and 18 containing nitrogen at 15 PSI; and an EVOH material for sheets 11 and 12 forming inner reservoir ~~chambers~~ inserts 14, with nitrogen at 50 PSI being contained in ~~chambers~~ inserts 14. As a result, the gas from channels 13 diffuses into chambers 15 and 18 until the pressure within all the inserts 14 and the chambers 14, 15 and 18 is equal to or has reached a predetermined level. Routine testing can be done with the barrier materials and gases to arrive at an appropriate diffusion from channels 13 into chambers 15 and 18. The reservoir function of inner ~~chamber~~ insert 14 can extend the life of bladder 10 as an effective cushioning element for a significant period of time, as much as two or more years, when compared to a conventional cushioning bladder.

Please replace the paragraph that extends from page 12 to page 13 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

In another embodiment of the present invention, the cushioning pressure is restored within chambers 15 and 18 when ~~chamber~~ insert 14 fails. This is accomplished by forming ~~chamber~~ insert 14 with sheets 11, 12 that fail when a load applied to bladder 10 causes a

predetermined internal pressure within ~~chamber~~ insert 14. When the predetermined pressure level within ~~chamber~~ insert 14 is reached, sheets 11 and 12 will fail and the fluid within ~~chamber~~ insert 14 will enter chambers 15 and 18 to restore the original level of cushioning pressure, which can be in the range of 5 to 25 psi, preferably 15 psi, or establish a new level of cushioning pressure within chambers 15 and 18, up to as high as 50 psi. Sheets 11 and 12 can include a preformed material weakness or they can be formed of a material that is more brittle than sheets 16 and 17. After sheets 11 and 12 fail, the newly established pressure levels within chambers 15 and 18 can be greater than the original pressure levels. In this embodiment, the materials used for sheets 11 and 12 would include thin material with low elasticity. It is preferred that the material allow no outward diffusion of the contained gas prior to its rupture, or at least that the material have a low rate of diffusion. Thin and elastic material is not preferred, since such material would allow the inner chamber to grow under high pressure. As with the above discussed embodiment, the gas contained within channels 13 is preferably nitrogen and the gas in chambers 15 and 18 is preferably nitrogen, but can be air or a supergas.

Please replace the paragraph that is wholly located on page 13 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

In another fatigue related embodiment, sheets 11 and 12 are formed of a material that fails after being used for a predetermined period of time. For instance, these sheets may be formed of a material that fails after the bladder has been flexed one hundred thousand (100,000) times or after three (3) months of use. In this embodiment, sheets 11 and 12 are thinner and more brittle than sheets 16 and 17. One preferred material would be Saran (PVDC). In general, the material should have less elasticity and less flex resistance, and have a high crystalline content. Failure can also be built into the inner chamber through the use of weak welds. As with the previous embodiment, the gas within ~~chamber~~ insert 14 is transferred to chambers 15 and 18 when sheets 11 and 12 fail in order to increase the pressure within these chambers and restore their ability to cushion during a foot strike.

Please replace the paragraph that extends from page 13 to page 14 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

The fluid contained within ~~chamber~~ insert 14 can also be released into chambers 15 and 18 by manual activation. As seen in Fig. 17, one way valves 60 can be positioned within each channel 13 of ~~chamber~~ insert 14 for allowing fluid to flow from ~~chamber~~ insert 14 into chambers 15 and 18. An actuator 61 is positioned on an exterior surface of footwear 1 for opening and closing each valve 60 so that a controlled amount of fluid is transferred from ~~chamber~~ insert 14 to chambers 15 and 18. Actuator 61 can release only a portion of the fluid within ~~chamber~~ insert 14 at a given time. Alternatively, actuator 61 can include a sharp end that punctures ~~chamber~~ insert 14 in multiple locations so the fluid within ~~chamber~~ insert 14 is released into chambers 15 and 18. Any conventional valve can be used for valves 60, with suitable values disclosed in U.S. Patent No. 5,253,435 to Auger et al., which is incorporated by reference.

Please replace the paragraph that is wholly located on page 15 of the application with the following, wherein deleted material is shown by strikethrough and added material is underlined:

Inner channels 130-133 are inflated with a gas such as those discussed above with respect to ~~chamber~~ insert 14. In a preferred embodiment, the gas is nitrogen and the chambers are inflated to a pressure between 40 and 60 PSI, with a preferred pressure being about 50 PSI. Like channels 13, inner channels 130-133 perform a dual function, they provide a second layer of cushioning and act as a reservoir for replenishing the fluid pressure within chambers 122 and 123. Each channel 130-133 is inflated using a respective inflation port 141-144 in an inflation region 140.